

# CALIFORNIA

## OCCUPATIONAL GUIDES

### BROADCAST TECHNICIANS

CALIFORNIA OCCUPATIONAL GUIDE - NUMBER 359  
2005

INTEREST AREA  
REALISTIC



Photo provided by Oregon State University

#### WHAT DOES A BROADCAST TECHNICIAN DO?

Technical activities in the broadcasting industry include a variety of jobs that are indispensable to the operation of television stations. These jobs are grouped under the title BROADCAST TECHNICIAN, and are in the engineering department, the 'nerve center' of broadcast stations. Broadcast Technicians, (sometimes called Broadcast Operators, or Broadcast Engineers) install, set up, test, maintain and operate the electronic equipment necessary to transmit radio, television, and cable signals to the public. They also record programming, operate equipment at live concerts, lay down sound tracks for motion pictures, and operate the mixing boards in a recording studio.

This work includes two categories of workers – Maintenance Technicians and Operations Technicians. Operations Technicians are the daily users of the equipment and are usually either program or production oriented. Maintenance Technicians troubleshoot and repair broadcasting equipment.

Broadcast Technicians perform the following tasks:

- Set up, operate, and maintain radio and television production equipment, including antennas and cables.
- Monitor transmission of news event to station and adjusts equipment as needed to maintain quality broadcast.
- Preview scheduled program to ensure that signal is functioning and program is ready for transmission.
- Perform preventive and minor equipment maintenance, using hand tools.
- Occasionally design or modify equipment to employer specifications.
- Observe monitors and converses with station personnel to set audio and video levels and to verify station is on-air.
- Select source, such as satellite or studio, from which program will be recorded.
- Read television programming log to ascertain program to be recorded or aired.
- Maintain log, as required by station management and Federal Communications Commission.
- Edit manuals, schedules programs, and prepares reports outlining past and future programs, including content.
- Instruct trainees how to use television production equipment, to film events, and to copy/edit graphics or sound onto videotape.

Broadcast Technicians in small stations have a wider variety of duties than those in large stations or network broadcasting facilities, where assignments may be specialized.

There are a number of specialties in the occupation:

*Video Tape Recording Operators* use and maintain video tape equipment to transcribe live programs. Many stations use computers to edit material electronically. *Video Operators* control panels of video consoles. They set switches and observe readings to control the contrast, brightness, color, quality, and size of television pictures. *Audio Operators* regulate volume level and quality of sound by adjusting controls and by mixing various audio elements. They assist in determining the number, type, and approximate location of microphones needed for best sound quality. *Microphone-Boom Operators* position microphones to pick up voices of performers in a way that does not distort the voice or interfere with studio lighting. *Projectionists* operate film and slide projection equipment. *Transmitter Operators* operate and maintain television transmitters according to regulations of the Federal Communications Commission. They monitor incoming and outgoing signals to assure strength, clarity, and reliability.

### WHAT SKILLS ARE IMPORTANT?

Important skills, knowledge, and abilities for Broadcast Technicians include:

- **Information Ordering** – The ability to correctly follow a given rule or set of rules in order to arrange things or actions in a certain order. The things or actions can include numbers, letters, words, pictures, procedures, sentences, and mathematical or logical operations.
- **Written Expression** – The ability to communicate information and ideas in writing so others will understand.
- **Written Comprehension** – The ability to read and understand information and ideas presented in writing.
- **Oral Comprehension** – The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Oral Expression** – The ability to communicate information and ideas in speaking so others will understand.

- **Operation and Control** – Controlling operations of equipment or systems.
- **Operation Monitoring** – Watching gauges, dials, or other indicators to make sure a machine is working properly.
- **Troubleshooting** – Determining causes of operating errors and deciding what to do about it.
- **Equipment Maintenance** – Performing routine maintenance and determining when and what kind of maintenance is needed.
- **Telecommunications** – Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.

### WHAT'S THE WORK ENVIRONMENT?

Technicians usually work indoors in well lighted and ventilated surroundings. Station temperatures are kept cool because transmitters and other electronic equipment malfunction when overheated.

At times, however, Technicians work outside, sometimes in remote areas. Temperature extremes may be encountered, although the equipment van, truck or trailer itself is usually heated or cooled so equipment can run reliably.

Depending on the job, physical activity varies from sedentary to strenuous. Some Technicians may be on their feet for long periods of time and some jobs require lifting. Pressure to meet deadlines can be mentally and physically exhausting.

### Union Membership

Technicians in some broadcast stations may belong to one of the following unions: International Brotherhood of Electrical Workers (IBEW), National Association of Broadcast Employees and Technicians (NABET), and various locals of the International Alliance of Theatrical and Stage Employees (IATSE).

## WHAT'S THE CALIFORNIA JOB OUTLOOK?

The following information is from the occupational projections produced by the Employment Development Department (EDD) Labor Market Information Division (LMID):

### Broadcast Technicians

Estimated number of workers in 2002:	5,100
Estimated number of workers in 2012:	6,200
Projected Growth 2002-2012:	21.6%
Est. openings due to separations by 2012:	1,200

*These figures do not include self-employment.*

This occupation will grow faster than average compared with all occupations in California. In addition, there will be about as many jobs created through job turnover from separations.

This growth will come in spite of several factors which will tend to suppress job growth.

The number of broadcast outlets is expected to remain stable through 2012. The majority of Broadcast Technicians are employed in broadcasting facilities of large metropolitan areas where most specialized jobs prevail.

Individuals seeking beginning jobs as Broadcast Technicians are expected to face keen competition in major metropolitan areas. Stations in such areas seek highly experienced personnel to fill few available openings. Prospects for entry-level positions for those with appropriate backgrounds should remain generally good in small cities and towns.

### Trends

The number of television and radio stations will remain constant, since the airwaves are relatively saturated throughout California. The traditional avenues for employment in this occupation, television and radio, are facing saturation in urban and nearby markets. The availability of alternatives to broadcast news and entertainment will increase as nationally-produced cable programming provides an alternative to local broadcast outlets. This includes the rapidly

growing satellite radio broadcasts systems. Additionally, the growth in broadband internet connections offer another alternative to news and entertainment programming. Growth is likely to come in those areas of the state where nationally-produced radio and television providers are located.

Technological improvements in the industry mean greater efficiencies in the workplace, also contributing to lessened pressure for broadcast employees.

## WHAT DOES THE JOB PAY?

### California Earnings

The following information is from the Occupational Employment Statistics Survey of Employers by EDD/LMID and represents Broadcast Technicians:

### Broadcast Technicians 2005 Wages

Hourly wages range from	\$12.69	to	\$32.51
Average hourly wage	\$22.62		
Average annual wage	\$47,048		

*These figures do not include self-employment.*

### Hours

Evening, night, and weekend shifts are common since many stations are on the air 24 hours a day, seven days a week. While the normal work week is 40 hours, some Technicians work a 35 hour week. However, overtime or weekend work may be necessary to meet broadcast deadlines. Compensation for overtime and night shift differential are available at some companies.

### Benefits

Benefits vary depending on length of service, particular jobs, size of stations, and union contracts. Many stations offer sick leave and holiday and vacation programs, as well as medical and dental coverage. Retirement plans and investment or stock options are available at some facilities.

## HOW DO I PREPARE FOR THE JOB?

### *Education and Training*

Although there are no established educational requirements, having a high school education, or its equivalent, plus job-related courses at a technical school or college, is considered the best way to prepare to enter this field. High school students planning to become Technicians should take courses in electronics, computer skills, and drama theater arts. Depending on the specialization, algebra, trigonometry, and physics can also be useful. Computer literacy is a must. Career training programs are available at private schools and colleges.

Prospective Broadcast Technicians must have an aptitude for working with electrical and mechanical systems and equipment. Opportunities for beginners are best in small cities, where less experience may be acceptable. Large stations often require three or more years of experience. Television internship programs are sometimes available through local television stations to qualified applicants.

### *Licensing and Certification*

There are no licensing or certification requirements for Technicians, but certification by the Society of Broadcast Engineers may enhance employment prospects.

### *Continuing Education*

There are no continuing education requirements in this occupation, but employees may attend classes to become familiar with new equipment or to learn other aspects of their job.

## HOW DO I FIND THE JOB?

Experienced Technicians may find jobs through referrals by their union, the Employment Development Department Job Service, or through private employment agencies. Technicians may also apply directly to employers. Another source of job leads is a training facility's job referral services. Classified ads in broadcasting journals are also helpful.

Direct application to employers remains one of the most effective job search methods. Most Technicians are employed in the television and radio industries.

Search these **yellow page** headings for listings of private firms:

- Television stations
- Radio stations

The following Internet resources can be helpful to the job search process:

America's Career InfoNet  
[www.acinet.org](http://www.acinet.org)

America's Job Bank  
[www.ajb.dni.us](http://www.ajb.dni.us)

CalJOBS<sup>SM</sup>  
[www.caljobs.ca.gov](http://www.caljobs.ca.gov)

Job Search and Resume Writing  
[www.worksmart.ca.gov/success\\_tips\\_menu.html](http://www.worksmart.ca.gov/success_tips_menu.html)

Local Job Service Offices  
[www.edd.ca.gov/jsrep/jsloc.htm](http://www.edd.ca.gov/jsrep/jsloc.htm)

Occupational Information Network (O\*NET) Online  
<http://online.onetcenter.org>

One-Stop Career Centers List  
[www.edd.ca.gov/ONE-STOP/pic.htm](http://www.edd.ca.gov/ONE-STOP/pic.htm)

For statewide and local projections, wages, employers by county, and other occupational information go to [www.labormarketinfo.edd.ca.gov](http://www.labormarketinfo.edd.ca.gov) and select *Find an Occupation Profile*.

## WHERE CAN THE JOB LEAD?

Opportunities for advancement depend on the extent and nature of training and experience obtained by Technicians. Those who possess the necessary experience and demonstrate above average ability and leadership qualities may advance to supervisory positions. They may move to technical director or through various levels to top positions such as chief engineer or manager of technical operations. Training at a technical

school or college is a distinct advantage for those who hope to advance to a supervisory position or to the more specialized jobs in large stations and networks.

## OTHER SOURCES OF INFORMATION

National Association of Broadcasters  
1771 N Street, N.W.  
Washington, DC 20036  
(202) 429-5300  
[www.nab.org](http://www.nab.org)

The Society of Broadcast Engineers, Inc.  
9247 North Meridian Street, Suite 305  
Indianapolis, IN 46260  
(317) 846-9000  
[www.sbe.org](http://www.sbe.org)

National Association of Broadcast  
Employees and Technicians  
Communications Workers of America  
501 Third Street, N.W.  
Washington, DC 20001  
(202) 434-1254  
[www.nabetcwa.org](http://www.nabetcwa.org)

International Brotherhood of  
Electrical Workers,  
900 Seventh Street, N.W.  
Washington, DC 20001  
(202) 833-7000  
[www.ibew.org](http://www.ibew.org)

International Alliance of Theatrical Stage  
Employees, Moving Picture Technicians,  
Artists and Allied Crafts  
1430 Broadway, 20th Floor  
New York, NY 10018  
(212) 730-1770  
[www.iatse-intl.org](http://www.iatse-intl.org)

NARTE, Inc.  
167 Village Street  
Medway, MA 02053  
(508) 533-8333  
(800) 89-NARTE  
[www.narte.org](http://www.narte.org)

## RELATED OCCUPATIONAL GUIDES

Electrical and Electronics Engineering Technicians	No. 60
Electronics Repairers (Commercial and Industrial Equipment)	No. 222
Instrumentation Technicians	No. 485

## OCCUPATIONAL CODE REFERENCES

**SOC** (*Standard Occupational Classification*)  
Broadcast Technicians 27-4012

**O\*NET** (*Occupational Information Network*)  
Broadcast Technicians 27-4012.00

**OES** (*Occupational Employment Statistics*)  
Broadcast Technicians 34028